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28 MAY 1948

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NAVAL MEDICAL RESEARCH INSTITUTE
NATIONAL NAVAL MEDICAL CENTER
BETHESDA, MARYLAND

TOUR OF THE NAVAL MEDICAL RESEARCH INSTITUTE
SYMPOSIUM OF THE SURGEON GENERAL, UNITED STATES NAVY
28 May 1948 - 1330 to 1445

FOREWORD

Since the period allocated for visiting the Research Institute is brief, this folder has been prepared in order to give you a picture of its scope and activities. Time will not permit you to visit all the laboratories. By studying this folder you can decide which activities of the Institute interest you most and concentrate on these. Guides will be available to conduct you to the places which interest you.

C. F. BEHRENS
Captain, (MC) U.S. Navy
Medical Officer in Command

GENERAL DESCRIPTION OF NAVAL MEDICAL RESEARCH INSTITUE

The Naval Medical Research Institute was established in October 1942 and was developed during World War II to its present size and scope of research.

It is the largest activity for medical research in the Navy, the plant value of the establishment being $2,560,134.00. On its 85,000 square feet of floor space there are more than 100 laboratories. They are designed for research in chemistry, biophysics, physiology, psychology, bacteriology, virology, parasitology, pathology, pharmacology, and for dentistry and experimental surgery. In addition, there are installations including pressure tanks for research in aviation medicine and submarine and diving medicine, and psychrometric rooms for physiological and environmental studies.

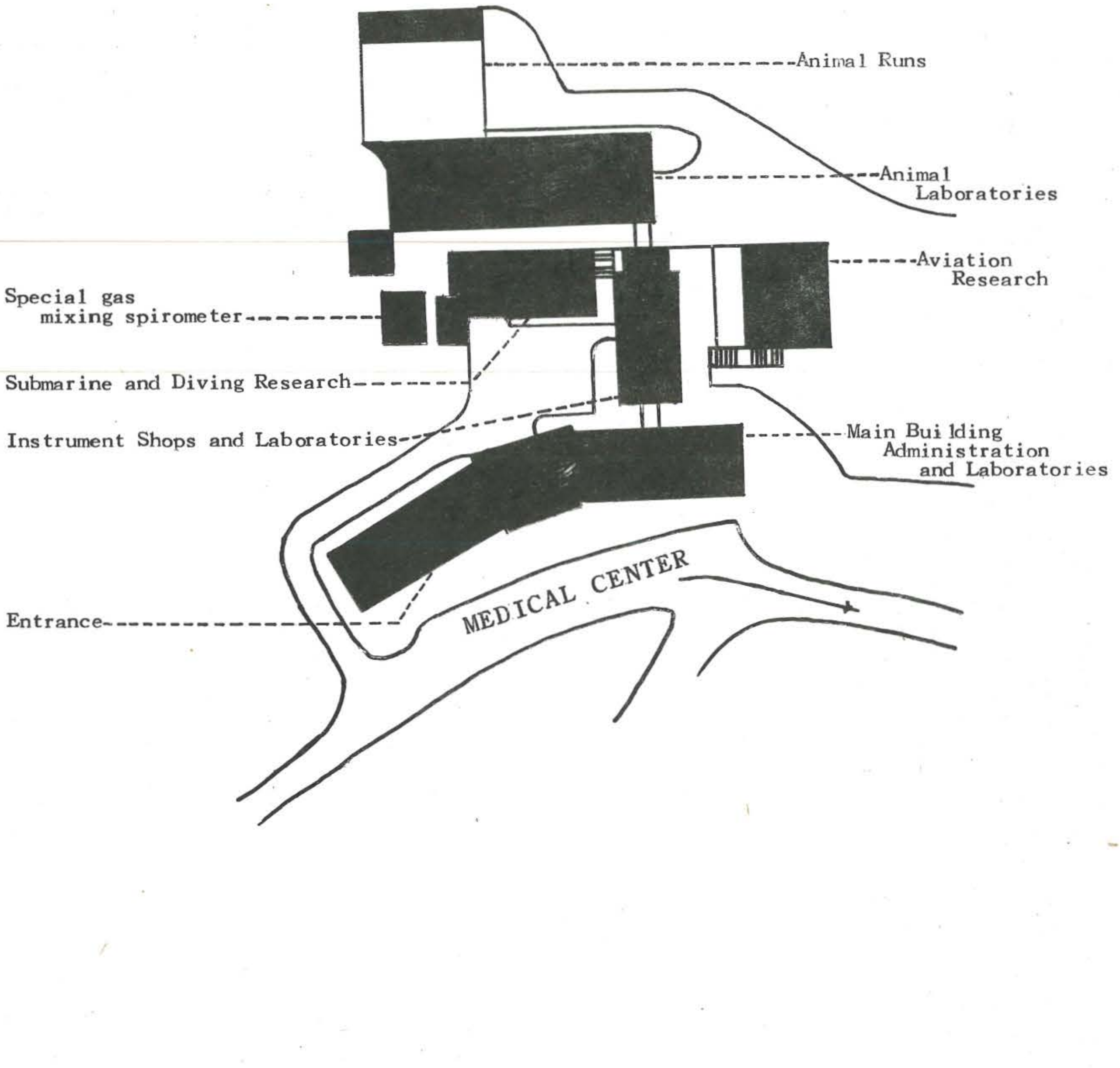
In support of these laboratories there is a large Animal Laboratory with modern facilities for breeding laboratory animals and with air conditioned laboratory suites for studies requiring control of temperatures and humidity. Technical shops, glass apparatus and instrumentation laboratories with skilled machinists and mechanics are available for the design and construction of laboratory apparatus. Practically every scientific instrument needed for biological research is available in the various laboratories. Many special apparatus and installations are included, such as the electron microscope, apparatus for X-ray diffraction and electrophoresis, an ultracentrifuge, and ultraviolet, infrared and mass spectrographs.

The Institute is organized under a Medical Officer in Command with two (2) executives, one for research and one for administration. The scientific staff consists of *61* scientists. This staff is made up of *25* Medical Corps officers, *16* Medical Service Corps officers, *2* Dental Corps officers, *1* Warrant Officer and *18* civil employees.

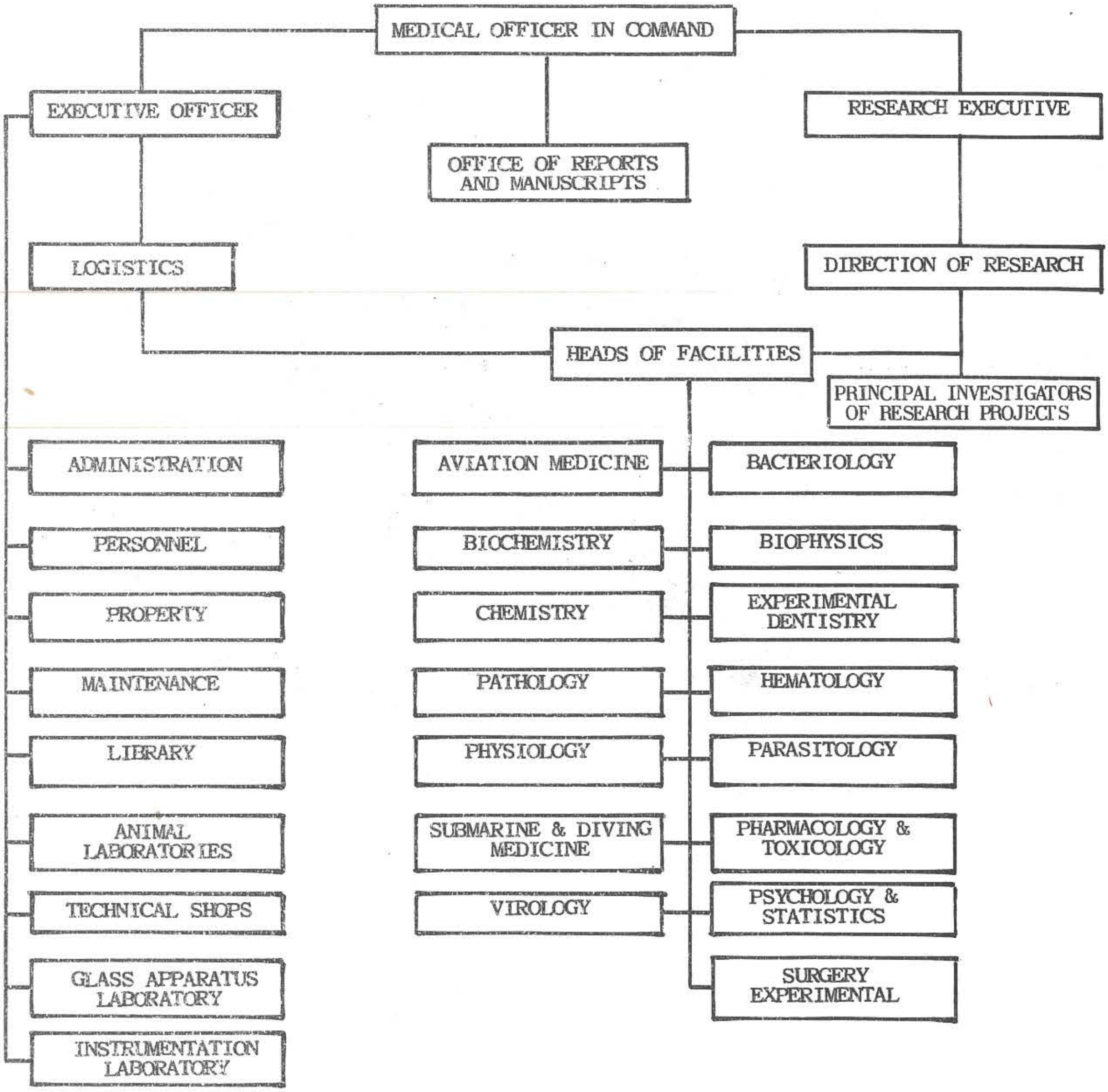
The civil employees are in grades P-3 to P-8. In the P-6 to P-8 grades there are *4* employees and in the P-3 to P-5 grades there are *14*. To serve as technical assistants in the laboratories there are *72* enlisted men and *17* civil employees in grades P-2 and below. To perform menial tasks in the laboratories there are also *14* per diem employees. In the Administration of the Institute *5* officers, *6* enlisted men and *17* civil employees are employed. The civil employees consists of *15* clerks and stenographers. Fifty-two employees are engaged in carrying out the service and maintenance of the Institute.

The scope of the research may be indicated to some extent by the enumeration of some of the research projects which have been completed or on which the staff is currently engaged: Water and food for shipwrecked personnel; evaluation and development of anti-exposure suits to prolong survival in cold water; development of chemicals for the sterilization of individual canteen water supply; effect of cool quarters on efficiency and performance of naval personnel working in hot spaces; effects on personnel of various concentrations of carbon dioxide and oxygen under conditions of submarine operations; the possible hazards connected with use of silicone insulations in submarine operations; seasickness and means of prevention; studies of the cause and prevention of immersion foot; improvement of lifejacket and stretchers for use aboard ship and air-sea rescue; effectiveness and practicability of body armor in preventing injuries from bullets and other missiles; prevention and treatment of oxygen poisoning in divers; the formation and appearance of gas bubbles in "bends" and means of preventing "bends"; use of penicillin in the treatment of peritonitis on small ships and isolated naval units; uses of tantalum wire for nerve suture; development of a salt tablet which does not cause nausea and vomiting to be used in the prevention of heat cramps; nutrition surveys by means of a Mobile Nutrition Unit at Naval Training Stations and aboard ship; evaluation and development of insect repellents and insecticides; development of an improved automatic photo-fluorographic camera for mass chest surveys for tuberculosis; studies of injuries from atom bomb explosions and means of treatment and prevention; the use of radioactive isotopes in medicine; the development of a vaccine for prevention of scrub typhus; the development of a procedure for the immunization of personnel against diarrheal diseases due to bacillary dysenteries; the effectiveness of ship board evaporators operating in polluted harbors; the prevention of crash injury in aviation; and the use of telemetering devices for recording physiological responses in aircraft.

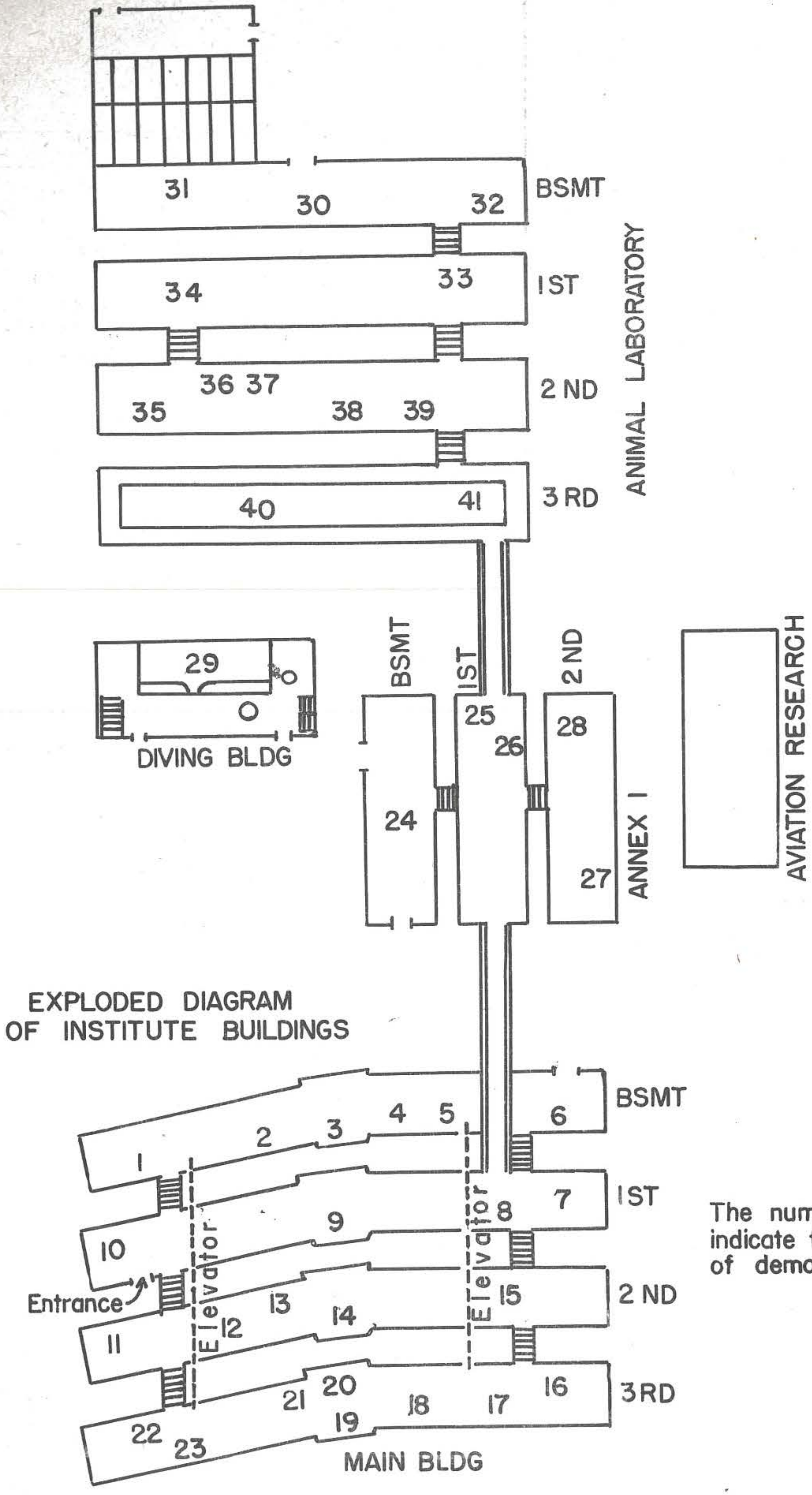
NAVAL MEDICAL RESEARCH INSTITUTE
GROUND PLAN


Animal Runs
Animal Laboratories
Aviation Research
Special gas mixing spirometer
Submarine and Diving Research
Instrument Shops and Laboratories
Main Building Administration and Laboratories
Entrance
MEDICAL CENTER

NAVAL MEDICAL RESEARCH INSTITUTE ORGANIZATION CHART



EXPLODED DIAGRAM OF INSTITUTE BUILDINGS



The numbers indicate the location of demonstrations

GUIDE TO LABORATORIES AND CURRENT INVESTIGATIONS

MAIN BUILDING

The laboratories can be located by consulting the exploded diagram of the institute buildings. The numbers on this diagram indicate the location of demonstrations having the same number. For example the electon microscope No. 20 is located on the third floor of the main building of the institute and is indicated on the exploded diagram as 20.

BASEMENT

1. DUPLICATING EQUIPMENT
2. PHYSIOLOGY LABORATORIES

   Studies of the effects of carbon monoxide on living organisms. Dr. G. C. Pitts.

   Diffusion of inert gases through liquids. Miss E. Tarver.

3. RADIOBIOLOGY LABORATORIES

   The utilization of radioactive isotopes in biological investigations. Lt. D. Minard.

4. PSYCHOMETRIC AND TREADMILL ROOMS
5. GAS ANALYSIS LABORATORY. - Mr. J. D. O'Neal.
6. LOW PRESSURE CHAMBER. - Commander S. W. Eyer.

FIRST FLOOR

7. CHEMISTRY LABORATORIES

   Physicochemical studies on native and chemically modified proteins. Dr. H. Saroff.

   Local anesthetics. - Mr. J. J. Mooney.

   Demonstration of the polarograph. - Mr. H. J. Mark.

   Spectromeasurement of fluorescent materials. Mr. L. P. Cecchini.

8. EDITORIAL OFFICES
9. ADMINISTRATIVE OFFICES
10. LIBRARY

SECOND FLOOR

11. BIOCHEMISTRY LABORATORIES

    Study of amino acid tolerance. - Lt. (jg) R. L. Burt.

12. EXPERIMENTAL DENTISTRY

Intra-oral photographic apparatus.

Rats' teeth showing the effects of oxalates.

Survey of dental defects.

Dental refrigeration anesthesia.

Comdr. C. A. Schlack and Comdr. S. R. Howell

13. ILLUSTRATING AND DRAFTING ROOM

14. CONFERENCE ROOM

15. BACTERIOLOGY LABORATORIES

Room 210 - Cultural and serological identification of Shigellas and Salmonellas.

Room 215 - 219 - Cultural and serological identification of enteric pathogens. - Lt. A. B. Smith.

THIRD FLOOR

16. BIOCHEMISTRY LABORATORIES

Biochemistry of gallium. - Comdr. H. C. Dudley

17. HEMATOLOGY LABORATORIES

Blood changes in ionizing radiation injuries.
Lt. Comdr. E. P. Cronkite, Lt. (jg) G. H. Lawrence.
Lt. (jg) W. J. Rashkind, and Lt. (jg) R. S. Farr.

18. PATHOLOGY LABORATORIES

Investigation of ionizing radiation injury.
Comdr. J. L. Tullis

19. X-RAY ROOM

20. ELECTRON MICROSCOPE. - Lt. (jg) H. T. Meryman.

BIOPHYSICS LABORATORIES

21. Cellular changes induced by ultrasonic vibration. Dr. W. W. Lepeschkin.

22. Physiological effects of vibration. - Lt. Comdr. D. E. Goldman.

23. PSYCHOLOGY LABORATORIES

Studies on decorticate and hemi-decorticate cats with special reference to mechanism of sleep. - Dr. J. P. Flynn, Dr. E. A. Jerome, Lt. (jg) R. A. Utterback, Lt. (jg) G. D. Ludwig.

ANNEX 1

BASEMENT

24. INSTRUMENT SHOPS. - Mr. J. F. Bronson.

FIRST FLOOR

25. ELECTRONIC LABORATORY. - Mr. M. Eicher.

26. GLASS APPARATUS LABORATORY. - Mr. A. D. Mack.

SECOND FLOOR

27. PHARMACOLOGY LABORATORIES

Apparatus for the determination of methyl alcohol.

Evaluation of drugs for antispasmodic activity.

Effects of injection of hemoglobin solutions upon the histological structure of the dog's kidney. Lt. (jg) J. E. Gajewski, Lt. (jg) A. L. Finkle.

28. VIROLOGY LABORATORIES

Studies of Rickettsia orientalis. (Visiting RESTRICTED - see Lt. (jg) R. R. Wagner, F.H. Diercks or Mrs. B. Bailey in Room 231.)

SUBMARINE AND DIVING BUILDING

29. RECOMPRESSION CHAMBERS AND DIVING TANKS.

Demonstration of methods of escape from stricken submarines. - Chief Pharmacist H. H. Snider.

ANIMAL LABORATORIES

BASEMENT

30. TISELIUS APPARATUS. - Mr. W. T. Platt.

31. LARGE ANIMAL STABLE.

32. MACHINERY ROOM.

FIRST FLOOR

33. STERILIZING ROOM, FEED ROOM, REFRIGERATORS AND STOREROOMS

34. SMALL ANIMAL COLONIES.

SECOND FLOOR

35. EXPERIMENTAL SURGERY

Surgical use of plastics. - Lt. (jg) T. J. Donovan.

36. INSECTORY

Screening of antimalarial compounds in the mosquito host. - Dr. L. A. Terzian.

37. Studies on tick control and the use of acarcides. Lt. (jg) L. A. Jachowski.

38. Room 211 - Course of experimental staphylococcal infection in mice during treatment with thyroid hormone. Dr. E. P. Vollmer.

39. ANIMAL DIET KITCHEN

THIRD FLOOR

40. MONKEYS, DOGS AND CATS

41. SNAIL COLONY.

Studies relating to the prevention and control of schistosomiasis.- Lt. R. E. Kuntz.

At the building marked Aviation Research, The Aviation Medicine Facility will be demonstrating the following devices:

Drop Tower.- Lt. Comdr. E. M. Wurzel, Lt. (jg) L. J. Polansky.

Link Trainer.- Miss A. L. Fochtmann